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ABSTRACT

This report contains 13 articles and book/film reviews on various topics related to the diffusion of health care information in developing countries; beginning with two articles which define primary health care, and suggest principles related to the community, communication, and the health practitioner upon which primary health care should be based. Other articles deal with the importance of the paraprofessional role, community participation, and preventive measures; Nicaragua's Rural Health Community Action Program (PRACS); Project Piaxtla, Mexico's health care network run by farm people; community and adult education in developing countries; and self-instructional health teaching modules for use in Africa. (CMV)

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"Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process."
—*from the* Declaration of Alma-Ata

PRIMARY HEALTH CARE

A 1975 recommendation by the UNICEF-World Health Organization (WHO) Joint Committee on Health Policy was the first major official recognition of the primary health care concept, which has been steadily gaining momentum in recent years. Primary health care was elevated to an even higher level of importance at the International Conference on Primary Health Care, held in Alma-Ata, USSR, in September 1978, jointly sponsored by WHO and UNICEF. There, delegates from 140 nations and a variety of Non-Governmental Organizations unanimously approved the Declaration of Alma-Ata, *calling for urgent and effective international and national action to develop and implement primary health care throughout the world, particularly in developing countries, aiming toward "an acceptable level of health for all the people of the world by the year 2000."*

Community, Communication, and the Health Practitioner

by Cecile De Sweemer

Like other development efforts, primary health care in developing countries depends heavily on communication, a dependence that is intensified both by primary health care's special mandate and by the importance of health to other development efforts. Primary health care seeks to deliver promotive, preventive, and curative care for the most common diseases through the most cost-effective means. It aims directly at the reduction of morbidity and mortality, and, where the appropriate motivation exists, can be used to make related services such as family planning widely available. It thus contributes significantly to that aspect of development termed the "quality of life" and can have a strong impact on people's perception of their achievements in development.

Maurice King, in *Medical Care in Developing Countries* (Nairobi: Oxford University Press, 1966) suggests a number of principles on which primary health care should be based. These statements are as valid today as when they were formulated:

- Patients should be treated as close to their homes as possible in the smallest, cheapest, most humbly staffed, and most simply equipped unit that is capable of looking after them adequately. . . .
- Some form of medical care should be supplied to all people all the time.
- In respect of most of the common conditions there is little relationship between the cost and size of a medical unit and its therapeutic efficiency.
- Medical care can be effective without being comprehensive . . .
- Medical services should be organized from the bottom up and not from the top down.
- The health needs of a community must be related to their wants.

The constant effort, in fact, is to get "the maximum return in human welfare from the limited money and skill available."

Primary health care projects around the world have found that the implementation of primary health care hinges on the quality and quantity of communication. "Extension," "health education," and "community orientation" have all tried to capture the essence of the communication process. They are incomplete terms, as they seem to imply unilateral communication from the health services institution to the people. The successful examples have gone far beyond this pattern, stimulating feedback from the communities and recognizing in program design the importance of face-to-face communication between community members.

Primary health care in developing countries consists only partially of services to be performed for people in the curative and preventive realms. It also constitutes a major effort to reorient the health-related behavior of the people by giving them new knowledge and new skills. Preventive and curative services derive part of their utility from their role in support of communication efforts to change health behavior.

For example, in most developing countries diarrhea is a major killer, particularly of small children. At least one-third of all early childhood deaths in Latin America are attributable to diarrhea. Diarrhea kills through dehydration and shock. If oral rehydration is started when the first abnormal bowel movement takes place, the chances of the diarrhea's becoming fatal are greatly reduced.

Curative services for diarrhea should thus be accompanied by a major educational effort to teach the mother of the sick child the procedures for preparing and administering simple water-salt-sugar solutions for oral rehydration. If these are taught to a mother when her child has a diarrheal problem, she has an enhanced eagerness to learn, and she gets immediate feedback on the practicability and utility of the new behavior. The communication is even more effective if the health practitioner uses a "satisfied" mother to help teach the new health behavior. This not only encourages the learning process but also sets a precedent to encourage the mother to communi-

(Continued on page 3)

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Communication for Paraprofessionals, Participation, and Prevention

by Royal D. Colle

The September 1978 conference at Alma-Ata on primary health care dramatically reinforced the point that innovative efforts are needed if people with little or no access to adequate health services are to achieve an acceptable level of health. Communication can play a key role in support of three important areas of effort in the primary health programs of developing nations: the use of health paraprofessionals, community participation, and preventive health measures.

Paraprofessionals

Various kinds of medical "auxiliaries" (such as midwives and herb doctors) have provided health services to their communities for years. What appears more prominently now is an emphasis by organized, formal health programs on using modestly trained indigenous people for "front lines" health service delivery. Reasons for this official movement away from the Western model of health care delivery vary. One justification is economic: it costs less to train and pay a health promoter than a doctor or nurse. Sometimes there are not enough of the more highly trained people who can or will serve in rural areas. Frequently, too, indigenous paraprofessionals are considered more effective than other health personnel because of their closer identity with the client population.

As important as paraprofessionals are in filling health service needs, their use in development programs is often plagued with problems. Training and support are two areas where more careful attention to communication can reduce problems. Worldwide, there are probably no two programs alike with regard to the duration, content and style of training for paraprofessionals. While in-service training is often built into paraprofessional systems, it is the rare program that has an *effective* in-service training program.

Creative efforts to develop training materials that go beyond current initial and in-service training programs are vital. For example, health promoters attending in-service training sessions can be given tape recorders and cassette tapes to take home, the tapes containing information that reinforces the training and introduces new ideas and techniques. The audiocassette system has important advantages: an audio medium is often easier for the paraprofessional to use, especially if literacy is a problem; it permits the use of drama, interviews, talks, and discussions to convey points effectively; repetition is easy; and the system is relatively inexpensive and durable.

More serious is the widespread problem of reaching isolated village health workers with continual training opportunities. Paraprofessionals are too often given a few weeks' training and then sent to the field and forgotten. Audiocassettes (delivered by mail or commercial products distributors) and two-way radio provide opportunities for needed in-service training; in addition, they can strengthen the paraprofessionals' sense of identification with the parent organization. Good and continual training is no substitute for proper pay and suitable materials support, but it is equally vital, and it requires an explicit communication strategy to make it effective.

Community Participation

Active community involvement in primary health programs has been endorsed in principle by major national and international development agencies. It is not always clear, however, precisely what this participation includes. A community might participate in policy making and management (for example, through health committees), evaluation, financial support of the program, the actual delivery of services, and as beneficiaries.

Whatever form it takes, participation does not happen spontaneously. In Nigeria's Lardin Gabas Rural Health Programme, it begins with a "sensitization" of the community to its needs—often prompted through a personal visit by someone from outside the community. This is a slow, deliberate process. Experience in the People's Republic of China, Tanzania, and elsewhere suggests that the process might be accelerated by using mass media to both encourage and orchestrate participation in health-related programs.

With careful planning, for example, radio broadcasts across a nation can persuade communities that better health is possible and that the people themselves should plan and take an active role in their health welfare. Broadcasts can provide communities with directions on how to conduct simple surveys and organize for action. They can also tie into organized community groups, such as mothers' clubs or cooperatives, to stimulate and guide action, as in the case of "radio forums," which have met with varying degrees of success. Publications and other communication materials might be used in coordination with such broadcasts. Obviously, a health service needs to be well-prepared to meet the consequent demands for resources, from medicines to training for new local health workers.

Prevention

Linked closely with the concept of primary health is the principle that prevention is a more realistic and economical health strategy than is a curative emphasis. As a World Bank Health Sector Policy Paper has noted, curative approaches lessen the harmful *effects* of disease, whereas preventive measures lessen the *incidence*.

A preventive health plan implies not only providing resources such as vaccines, nutritious foods, and materials for developing sanitation facilities, but also addressing the problem of people's inclination and ability to use these resources effectively. That this is no simple task is well-illustrated by stories of people failing to use readily available help for their problems: vitamin A deficiency persists in Java, even though vegetables with an abundance of vitamin A are commonly available to low-income families; health posts go unused in Latin America; and in West Africa, malnutrition has been attributed to a poverty of knowledge rather than economic poverty. Such situations present great challenges to both the health educator and the communications professional.

In a recent American Public Health Association study of 180 health projects in developing countries, one survey question listed 16 kinds of activities and then asked: "How active or interested in this area is your project?" Tied at the top of the list were "health education" and "treatment and care of the ill," with 79 percent of the projects reporting that they were "actively working toward definite objectives" in these areas.

One gains the impression from looking at health education programs, however, that many are sterile, underfunded, and receive low priority for implementation. In a health center in Colombia, a health *promotora* said recently that the doctor who headed the clinic did not really consider health and nutrition education part of his work. In other cases, the front line health workers who bear responsibility for health education do not have the knowledge, time, or backup support to do it properly.

Health educators may also suffer from a reputation of giving boring talks to captive audiences. Those involved in health education should take a look at the approach (if not the techniques) used in family planning communication. The family planning people could not assume they had a product and service that everyone was wildly eager to get. They had to paint signs on elephants, develop radio programs, and train outreach workers to communicate and persuade. The health field needs to approach prevention and education with this kind of dedication, creativity, and enthusiasm.

The health education efforts of paraprofessionals can be strengthened by providing them with tape recorders to use with community groups. Tapes can bear the burden of presentation, with the promoter or a volunteer leading discussions. (Tapes also preserve the integrity of the information.) One side of a tape can give the discussion leader ideas for introducing and moderating the program and gathering resources for use in the session. Tapes can also be used for feedback to project officials. If a library of tapes is prepared, community groups can select their own topics and are not totally dependent on the promoter or on the perception of an outside official as to what is important. This is also a good opportunity to increase community participation.

Radio broadcasting, which reaches so

much of the developing world, is too frequently underutilized as a medium for health communication. If radio is used at all in health and nutrition efforts, the tendency is to concentrate on using large national stations and to overlook or discount the value of local stations for simple education. With a modest amount of training, a local health committee or community health worker can prepare talks, interviews, or short plays specifically patterned to local people. This not only increases participation but can enhance the paraprofessional's self-image as his status in the community increases.

Well-planned health communication programs should involve doctors directly; they usually control the formal health system politically and technically. Doctors will generally agree to be interviewed or talk on a cassette recording or radio program, especially if someone helps them develop the message. Not only do they lend considerable authority and credibility to a project, but they become more supportive and improve a project's chance of success.

People interested in health education find it disconcerting to visit clinics and see people waiting for hours to get service. There is a great opportunity to use these thousands of waiting hours not only to provide information and education, but to make the clinic visit a far more positive experience. In the Philippines, for example, recordings of dramas on family planning originally developed for radio were played in clinic waiting rooms. This idea can be readily adapted to other situations.

It is encouraging to see that in several recent health projects undertaken under World Bank auspices, clinics are being designed to include versatile education facilities. With an assortment of tape recordings and modestly constructed individual listening stations, perhaps supplemented with illustrated booklets, health post visitors can go through a learning program tailored to particular needs. For example, the doctor in a small Latin American village speaks only Spanish; the villagers speak Quéchua. An inexpensive tape recorder could provide taped information in Quéchua on the procedures and benefits of the clinic, the kinds of questions the doctor needs to ask and why, and specific problems such as worms and diarrhea.

The Challenge

One of the most innovative responses to the Alma-Ata challenge to reach more people with effective primary health care would be for health officials to build into their health planning a carefully developed and explicit communication strategy. Careful analysis of individual situations and resources will reveal a much wider range of opportunities than appear in this brief essay. The potential outcome of such efforts argues in their favor: paraprofessionals may function better, participation may become a reality, and prevention might become a major force in improving health. ■

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Community . . .

(Continued from page 1)

cate the new information in turn. Such lateral communication is likely to cover more of the population more quickly and with a deeper impact than would ever be possible merely through the health practitioners themselves.

Patterns of Communication

Three main patterns of communication thus emerge as important to primary health care efforts: "lateral" transmission, center to periphery, and periphery to center. Because of its role in supporting these three patterns, the mass media merit special consideration as a subsidiary pattern.

A great volume of communication is carried by the lateral communication network—the network of friends, neighbors, co-workers, and others with whom one comes into contact in the community. This spontaneous network can carry a surprising variety of messages and a great deal of technical information.

As development accelerates, government planners increase their attempts to reach the population with specific instructions and messages through extension efforts. This communication from center to periphery is most effective when it takes into account the existence of the lateral networks and simplifies messages so that they are likely to be communicated through the lateral network.

In the participatory development model, great efforts are made to increase the flow of feedback from the periphery to the center, a process that helps to refine the messages and begins to empower people to shape their own lives.

Planners and professional communicators often equate development communication with the use of mass media. The mass media are most useful when they feed upon and reinforce the spontaneous communication networks which parallel and support the development effort. In most developing countries, the scope of the development messages carried through the spontaneous networks far exceeds that of the mass media messages. Above all, spontaneous networks are more likely to carry conviction and stimulate behavioral change.

Training the Primary Health Worker

The fact that each of the three communication patterns plays a significant part in health care delivery has profound implications for the training of primary health practitioners. Whether they are auxiliaries or recognized "professionals," primary health practitioners need a wide range of communication skills for providing individual or face-to-face advice, teaching, effectively using other communicators such as "satisfied users" and community leaders, public speaking, leading group discussions, and serving as a resource person for community groups. They need to be trained in the use of role playing, case studies, and demonstrations—powerful methodologies that can be adapted to different settings.

Song, dance, and drama can also be crucial components of primary health care education efforts, as illustrated in the film, *That Our Children Will Not Die*, produced by the Institute of Child Health in Lagos, Nigeria. The film depicts a health project in northern Nigeria in a largely preliterate community where song, dance, and drama are the primary educational media. These media are used to train local health workers, who use them in turn to teach the villagers about such health problems as schistosomiasis, tuberculosis, and malaria.

Simple audiovisual techniques such as flannelgraphs and posters can be used to good effect in many cultures. Such media as films, slides, and videotape, while useful, are frequently too expensive for primary health care efforts in developing countries, and are seen by most developing societies as poor substitutes for demonstrations, cases, or plays.

The more case presentations or plays actively involve community members, depict locally relevant situations, and encourage families and villages to reflect on the practical consequences of certain practices, the more likely it is that new attitudes and knowledge will be translated into new behavior. Demonstrations of health techniques are more successful if they actively involve individuals in trying out new behaviors and discussing the problems and rewards associated with these behaviors. Demonstrations that are purely "observational" or that use tools not locally available generally do not stimulate significant changes in behavior.

Information about desired behavioral changes that are difficult to demonstrate, such as the need to breastfeed babies past 18 months of age or the use of family planning methods, can be communicated through role playing and in a combination of individual and group discussions. In a Punjab project that used such techniques, breastfeeding was extended by an average of five months, from 15 1/2 to 20 1/2 months.

Project experiences around the world thus tend to confirm that community health workers delivering primary health services in the developing world perform different functions than do hospital-based health workers, and they require a different kind of training. While they derive their credibility from basic clinical skills, good clinical skills are not sufficient. Primary health care practitioners are also community communication specialists, and they need skills and training in the use of simple techniques to communicate new knowledge and behavior. Above all, they need commitment to people and to the power of people to shape their own lives. ■

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Popular Planning and Radiophonic Schools: Nicaragua's PRACS Program

by James E. Sarn

In April 1976 the Nicaraguan Ministry of Health initiated an ambitious Rural Health Community Action Program, known as PRACS. By August 1978, when civil war broke out, the people of Nicaragua had started through PRACS an impressive number of community health projects, and the program was well ahead of schedule. The achievements of PRACS are noteworthy in that they took place in a tense pre-war period and within a public health system still suffering the strain of the devastating December 1972 earthquake in Managua. Two elements of the PRACS design stand out as strong contributors to its early success. One was its reliance on the resources of the community; the other was the radiophonic schools.

The PRACS program was designed to address the major health problems revealed by the Nicaraguan Health Sector Assessment, which was begun in 1974 and completed in 1976. The assessment described a health situation typical of rural populations in developing nations: high rates of morbidity and mortality from preventable diseases and malnutrition, high infant and maternal mortality rates, and extensive protein-caloric malnutrition in children, all compounded by insufficient health resources and a soaring population growth rate of 3.2 percent.

A major long-term program of health facilities construction and health manpower development was out of the question at the time, so the Ministry of Health, in consultation with USAID and the local Pan American Health Organization representative, developed PRACS. The objective was to teach each community how to solve its own health problems by guiding it through a priority health project to solve an immediate need, in the process teaching the community problem-solving methodologies.

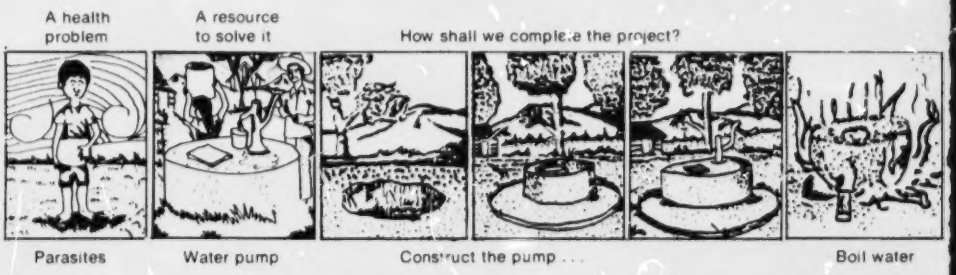
The main components of PRACS, as defined by the Ministry of Health, were:

- the training of health educators;
- the diagnosis of the rural health situation;
- the establishment of community health committees;
- the training of rural health promoters;
- the development of community health projects;
- the implementation of radiophonic schools,
- the development of programs of school health education;
- the establishment of interinstitutional coordinating committees;
- the development of community organization abilities of health team members.

Health Educators and "Popular Planning"

Health educators, trained in community health planning and community organizational skills, lived among the villagers, providing the link between the community and regional and national resources. The health educator initiated health awareness programs, identified formal leadership elements and informal opinion leaders in the community, and trained and supported community health workers.

A series of illustrated planning charts *(see illustration)* was designed for health educators to use at community meetings to give initial direction to the community's health awareness, organization, and planning activities. The charts guided a community health committee as it conducted a simple epidemiologic survey of the community's health problems and needs; evaluated the health resources available in the community; evaluated community skills; reviewed feasible community interventions to reduce an identified health problem; selected priority "health packages" from those available from the health educator; and determined responsibility for accomplishment of specific implementation tasks, a time for completion of the project, and community members to operate, maintain, and evaluate the new health system.



This protocol, called *"Planificación Popular"* ("Popular Planning"), had strong impact both on the health educators and on the community. Health educators, no longer in their traditional didactic roles, were not responsible for insisting that a community practice good hygiene, only for insuring that all options had been considered prior to a community decision. Communities soon recognized the power of the organizational methodology, and for every community scheduled to receive a health educator to help initiate community activities, another two had to be placed on the waiting list.

Many *traditional* health education skills and methods were also used in PRACS, with proper modification. Project personnel worked with the Ministry of Health to modify primary school curricula, train community people as health educator assistants and health collaborators, develop a series of booklets for "Popular Planning" activities, and create the radiophonic schools. While all of these were effective programs, most remarkable in their effect were the radiophonic schools.

The Radiophonic Schools

Based to some extent on the Colombian *Sutatenza* model, the PRACS radiophonic schools were the first in Latin America to focus solely on health. They were designed to supplement the community activities of the health educator by stimulating community participation in health programs and activities and promoting the adoption of specific health behaviors. Each lesson in a radiophonic school course consisted initially of a 30-minute broadcast of instruction and test questions, complemented by community-produced flipcharts. Local commercial transmitters were used for the broadcasts. Several days of spot announcements preceded each course. At a chosen time, the radio listening groups would gather for the broadcast lesson; the health educator or community health worker would flip the charts in coordination with broadcast cues. The first course conducted by PRACS consisted of ten lessons directed toward pregnant women; the second had six lessons for mothers breastfeeding children aged 0-2.

The initial expectation was that the radiophonic schools would impart minimal health knowledge to the villagers and maintain the community's interest in the project in the absence of the health educator. In fact, pre- and post-tests indicated that villagers were increasing their knowledge by as much as 100 percent as a result of the radio-based classes. Further, the follow-up test conducted six weeks after the post-test demonstrated a continued rise in knowledge for villagers in areas covered by the radiophonic instruction. The radiophonic classes were actually being reinforced by the social conversations of the villagers.

Indications of Success

The radiophonic schools were not alone in surpassing initial planning expectations. The initial PRACS goal was to develop various health education and community organization methodologies and evaluate their effectiveness through the implementation of 45 community health programs within three years. By July 1977 the program had attracted two major loans, one from the World Bank and the other from USAID, which proposed to support the completion of 500 major community health projects by 1981. By the end of the first-year evaluation of complementary loan-sponsored activities, some 56 communities had contributed 400 percent more in resources than had been anticipated. Additionally, despite the program's being ahead of schedule,

central government and loan expenditures were less than had been anticipated. The size and complexity of the projects also mushroomed. Simple wells were replaced by six-kilometer aquaducts; community latrines were replaced by family latrines; and basic first-aid trunks were replaced by one-room clinics.

Why these activities flourished in areas simultaneously being infiltrated by guerrillas is not easy to document, yet while other government program vehicles were burned, PRACS personnel were able to travel to isolated communities without incident. The success of PRACS and the respect shown to the health educators seem to have emanated from:

- placing the responsibility for community health activities in the hands of the community;
- respecting and supporting the decisions of the community health committees;
- having health educators live in the communities they supported;
- developing multiple means of communicating with the villagers;
- conducting selective recruitment and providing incentives for health educators and support personnel to work in rural areas.

Many of the planned rural development and health activities pioneered by PRACS have unfortunately been curtailed by the large-scale conflict being waged in Nicaragua and the dwindling resources for health and social programs. Whatever the outcome of this tragic conflict, the health education methodologies of PRACS were beginning to demonstrate their capability and potential for making a significant impact on health problems and bringing pride and respect to the villager. ■

James E. Sarn, former USAID advisor in public health in Nicaragua, is currently with the Arizona Department of Health Services.

Project Profiles on Health

A series of two-page summaries, or *Project Profiles*, of development projects that involve the systematic use of media are published quarterly by the Clearinghouse. *Profiles* currently available on health communication projects include the following:

The Pila Project (Guatemala)
Man Is Health, or *Mtu ni Afya* (Tanzania)
Telemedicine in Alaska
The Danfa Comprehensive Rural Health and Family Planning Project (Colombia)
Zaa na Uvatunze, or the Kiroboto Show (Kenya)
Promotores de Salud, or the Rural Health Promoters' Program (Guatemala)
Radio Doctor (Haiti)
The Kavar Village Project (Iran)

Project Profiles are available at no charge from Judy Brace of the Clearinghouse.

Health Care for the People, by the People: Project Piaxtla

In the Sierra Madre of Sinaloa in western Mexico lies a rugged region untraversed by even the most primitive road. Referred to as *las barrancas*, the region is dotted with small villages and ranchos linked by narrow mule trails. The majority of the people, of mixed Indian and Spanish extraction, live on a subsistence level, suffer many physical hardships, and are plagued by diseases endemic in poor communities—pellagra, intestinal parasites, tuberculosis, leprosy.

Although Mexico's public health program has made important advances, its services do not effectively reach this vast mountain area, so the people must rely on their own resources for health care. Folk healers include *curanderos* (herb doctors), witch doctors, bone setters, midwives, spiritual healers, and, more recently, *médicos practicantes*, or empirical doctors who, although untrained, obtain and administer many modern medicines. All of these folk healers provide important services, but health care remains inadequate. Malnutrition and infectious diseases are prevalent; even minor injuries and ailments often become serious and are sometimes fatal.

The Community Health Care Network

Project Piaxtla, a health care network run by *campesinos* (farm people), covers several thousand square miles and serves a population of some 10,000 persons in more than 100 small settlements and villages. It attempts to involve the communities in a process of meeting their own health needs in a humane, economically realistic, ecologically sound manner.

The project has evolved slowly since 1963, when David Werner, an American biologist and former high school teacher, first hiked through *las barrancas*. Struck by the enormity of the people's health problems, Werner later returned to work with them.

Villagers were involved with the health work from the start. For a number of years, however, many health services were provided by American volunteers, the net effect of whose presence was to increase the villagers' dependency on outside assistance. The decision was finally made that all outsiders, including visiting professionals, would come not to provide services but to teach, not to practice their respective skills but to train others.

Today the community-based health program is run and staffed completely by local villagers. The main referral and training center, in the small village of Ajoya, operates an out-patient (and occasionally in-patient) clinic, complete with laboratory and X-ray facilities, and provides dental, veterinary, and orthopedic services.

Over the years increasing emphasis has been placed on preventive medicine and health education. Early and sensible curative medicine is considered part of prevention. Every clinical consultation is seen as an opportunity to discuss with the sick person and his family the causes of his ailment, its rational treatment, and how to avoid it in the future.

The Ajoya center conducts an "Under Fives" clinic and classes for mothers, and involves families and school children in a variety of public health activities, including construction of latrines and preparation of garbage disposal areas. The dental preventive program, which focuses on preschool and school children, includes systematic application of fluoride and instruction on the care of the teeth.

Training the Village Health Worker

Perhaps the most important activity of the program is the training of village health workers, called *promotores de salud* (health promoters). Selected by their own remote communities, the *promotores* spend two months training in Ajoya. The "learning through doing" approach to training includes preventive and curative medicine, with a strong emphasis on community organization, *concientizacion* (consciousness raising), and teaching techniques.

The training teaches a respect for the use of local skills and materials. *Promotores* learn to stage "campesino theater" productions to convey health messages. They make "gourd babies" to illustrate principles of dehydration. A "birth box," made from a cardboard box, is used to demonstrate problems that occur in the birth process. Super-sized flannelgraphs are used for matching games that help the *promotores* learn the proper use of antibiotics. A chart with movable parts, created by the resource center team, shows the invasion pattern of respiratory infection.

Promotores learn how to set broken bones by practicing on an "arm" made from sticks and a piece of innertube; how to make casts from the juice of a local plant and how to pad them with wild kapok; how to suture by practicing on a surgical glove. They also learn to use the health care manual, *Donde No Hay Doctor*, not as a textbook to be memorized, but as a tool, a source of information that they can share with the villagers.

At the end of the training, the *promotores* return to their villages, where they serve in isolation, totally dependent on the skills they have learned—and on the resources of the community.

Working toward Self-Sufficiency

Having achieved self-sufficiency in terms of personnel, the village health team is now working to achieve financial self-sufficiency. The *promotores* in outlying villages work only part-time as health workers, continuing to earn their living through farming; they collect very modest fees for their services, providing necessary medication at cost.

Their communities contribute half the cost of their room and board during the training program.

Financial self-sufficiency has proved far more difficult for the operation of the referral and training center, which now has six full-time and four part-time salaried workers. The team has undertaken various activities to help meet program expenses, including chicken and hog raising, a cooperative corn bank, and a vegetable farm. All clinic workers put one-third to one-half of their time into these activities, which not only bring additional income into the center, but also help to upgrade the nutritional level of the village and serve as a model for improved farming.

Villagers may pay for health services with either money or work. During the summer rainy season, "work fiestas" have been conducted, in which many villagers pitch in to plow and plant fields loaned to the clinic. For two hours of work, a family receives credit for a consultation, complete with medicine if needed.

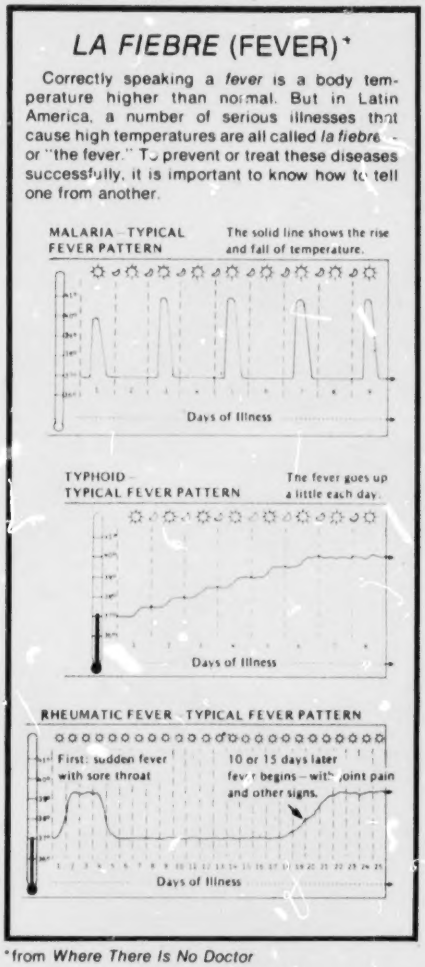
Project Piaxtla and Other Programs

One recent development is that the project appears to be self-seeding. A group of villages in Durango, peripheral to the area of coverage of Project Piaxtla, has long been eager to start a similar program. In 1976 a member of the Ajoya village team began to help the villagers of the Huachipetas area of Durango organize and raise funds to build a health center and train health workers. Community participation has been phenomenal. The new clinic is already completed, and three health workers from the area participated in the 1978 *promotores* training program in Ajoya. Project Piaxtla has also begun a program of student exchange with other rural health programs in more distant parts of Mexico and as far away as Honduras.

Project Piaxtla has no formal ties with the Mexican Health Department. However, it collaborates with health authorities in vaccination campaigns, malaria eradication, and tuberculosis control. The Ajoya clinic has special arrangements for patient referral to doctors on the coast who sympathize with the community-based program and charge reduced rates to those who are poorest.

Project Piaxtla is in some ways similar to other community-based health care endeavors in Latin America. It differs from most, however, in the following ways:

- It is completely run and directed by the villagers themselves.
- Most financing for the ongoing program is generated locally. Any fundraising through outside sources is undertaken by the local team.
- The program is run, directed, and supervised completely by local nonprofessionals; visiting professionals are secondary to and supervised by the local team.
- The medical sophistication of the local nonprofessional team is exceptional. Health promoters are able to cope adequately with 80 to 90 percent of the patients they see; the village team in Ajoya can adequately manage 98 percent of patient visits. For the most part, the team provides appropriate care at far lower cost than that received by patients who go to distant medical facilities.
- The project has a vision of community health that includes equity and social and political justice. The local team is increasingly confronting controversial social issues as it discovers that the health of people depends as much on these factors as on "health care" in the more limited sense.
- Emphasis is placed on sharing knowledge and treating everyone as equals. An attempt is made to demystify medicine—to make it both simple and sensible.


LA FIEBRE (FEVER)*
Correctly speaking a fever is a body temperature higher than normal. But in Latin America, a number of serious illnesses that cause high temperatures are all called la fiebre or "the fever." To prevent or treat these diseases successfully, it is important to know how to tell one from another.
MALARIA—TYPICAL FEVER PATTERN
The solid line shows the rise and fall of temperature.
Days of Illness
TYPHOID—TYPICAL FEVER PATTERN
The fever goes up a little each day.
Days of Illness
RHEUMATIC FEVER—TYPICAL FEVER PATTERN
First: sudden fever with sore throat
10 or 15 days later fever begins—with joint pain and other signs.
Days of Illness

*from *Where There Is No Doctor*

Often the health worker will open a book and read about an illness together with the sick person. There are no uniforms, diplomas, or other ordained structures to institutionalize health care or separate the health worker from the people. ■

Project Piaxtla was David Werner's original motivation for writing the village health care manual, Donde No Hay Doctor, published in 1973. The expanded English version, Where There Is No Doctor, *is reviewed beginning on this page.*

BOOKS. . .

for the Village Health Worker

Where There Is No Doctor: A Village Health Care Handbook, by David Werner (Palo Alto, California: Hesperian Foundation, 1977), 403 pages.

David Werner went to Mexico about 15 years ago, to an area where people living in remote mountain villages had little access to health care. He joined them in their efforts to improve their health, encouraging them to assume responsibility, as a community and as individuals, for their own health maintenance and curative care.

The methods they developed and learned appeared in 1973, in Spanish, as the first edition of *Donde No Hay Doctor*, a guide for health care in villages where there is no doctor. Revised Spanish editions appeared in 1975 and 1976, the changes primarily reflecting Werner's and the villagers' increasing skill in handling the basic preventive and curative aspects of health care in the absence of conventionally organized health services. The Spanish edition is now being used as a training and work manual in at least 15 Latin American countries. In 1977, the English edition of the book appeared under the title *Where There Is No Doctor;* it is already being used as a training manual in at least 100 countries. Portuguese and French versions are in process.

The standard medical content of the book has been reviewed by a panel of physicians and is factually accurate, covering the health problems commonly seen in the developing world. It discusses the right and wrong use of modern medicines, antibiotics, injections and how to give them, first aid, nutrition, preventive measures, common illnesses, the usual rundown of diseases of the various systems, midwifery, family planning, and pediatric and geriatric principles. The final section, "The Green Pages," is a formulary for use by the village health worker, listing drugs by generic name, and indicating uses, dosages, and precautions. Spaces are provided for the health worker to note the cheapest and best locally available form of each drug and its cost.

Werner wants the information in the book to be available wherever it is needed, encouraging its accessibility through two unusual policies: *"Any part of this book may be reproduced without permission, provided the parts reproduced are distributed free or at cost,"* and *"The book is sold at a lower price to those living in poor countries than to those in rich countries."*

Where There Is No Doctor is a pleasure in both the English and Spanish language editions. It obviously grew out of extensive local experience and a lot of caring and is simple in presentation without being patronizing. It builds upon a respect for that

which is good in home cures and popular beliefs (tea made from willow bark will help bring fever down and stop pain), and criticizes candidly and fairly those folk cures and beliefs which are harmful (turning a baby upside down and slapping his feet will not cure a sunken fontanel, or soft spot). The book tells, more than any other such guide, why things happen and how curative or preventive measures work.

Werner himself drew the illustrations. He is in no way a professional book illustrator, but his knowledge and understanding of the village give his drawings a relevance unachievable by a professional far from the scene. He is a marvelous educator. He knows how to simplify and how to emphasize what is important, stating the essence of instructions in succinct sentences that are often printed in boldface type and enclosed in boxes so that the information can burn into memory and is easily located.

The English edition adds an introductory chapter, "Words to the Village Health Worker," that suggests ways to best use the book, how to teach health, and how to relate to the people with whom one is working to improve health. This chapter is well worth adding to the Spanish and any other editions

Written specifically as a guide for village health workers in a mountain valley in Mexico, the manual is in reality the product of a long learning process by Werner and that community. As such, it has great strength for its place, but might or might not travel well to other locations and cultures in its exact form and as a specific guide. The cultural and health *proscriptions* of one area may well be the *prescriptions* of another. Werner recognizes this possibility and addresses it in the first English edition, written for adaptation in Africa and Asia: "To be fully useful, this book should be adapted by persons familiar with the health needs, customs, special ways of healing, and local language of specific areas" — a crucial caveat in a book that grew so completely out of the soil of one culture. That it is worth adapting is unquestionable; it has the universality of good basic health knowledge presented in an effective format that will lead to its being not filed away in the library of the Ministry of Health, but placed in the hands of village health workers and used daily by them. With careful adaptation to the realities of each culture where it is used, *Where There Is No Doctor* is in a fair way of becoming a classic. ■

English edition available from The Hesperian Foundation, P.O. Box 1692, Palo Alto, California 94302, U.S.A., or from T.A.L.C., Institute of Child Health, 30 Guilford Street, London WC1N 1EH, U.K.

Spanish edition available from Editorial Pax-Mexico, Rep. Argentina, 9, Mexico 1, D.F., Mexico, and also from The Hesperian Foundation and T.A.L.C. at the above addresses.

Reviewed by Dr. Harold Royaltey, director of community health programs for Project HOPE.

for the National Health Planner

Manpower and Primary Health Care: Guidelines for Improving/Expanding Health Service Coverage in Developing Countries, edited by Richard A. Smith (Honolulu: The University Press of Hawaii, 1978), 189 pages.

The Health Manpower Development Staff (HMDS) at the University of Hawaii has been working since 1974 to design an approach to organizing improved and expanded primary health care systems in developing countries, taking into account that while capital-intensive development is inappropriate for many developing countries, there is great potential in their human resources. *Manpower and Primary Health Care*, written jointly by past and current members of HMDS, describes the model they have devised—the MEDEX approach—including detailed discussion of the steps involved in planning, implementing, operating, and evaluating such a system.

MEDEX is a three-tiered health-care system involving doctors, intermediate-level doctor extenders, and village-level doctor extenders or community health workers (CHWs). The term *doctor extender* in French (une extension du médecin) yields the word *medex*, used to describe the intermediate or mid-level health worker who serves as a link between the doctor and the village health worker.

Under MEDEX (used in capital letters to refer to the system), the doctor is responsible for managing and supervising the health care system for a reasonably large geographical area (serving 50 to 100 thousand people) and solving the more serious medical problems through referrals. The medex, who receives from 12 to 18 months of training, ideally serves from five to ten thousand people and has curative primary care responsibility for that community. The CHW is chosen by his community and receives only a few weeks of training. Serving more as a "change agent" for a population of 1,000 or less, the CHW has primary responsibilities in preventive and promotive services, with only limited curative responsibilities.

MEDEX emphasizes the importance of the multiplier effect of training, as each medex can help train CHWs and other medex personnel. The system also attaches great importance to management skills, as these can assure either the success or defeat of a primary health care program. The MEDEX approach promotes a nationwide health delivery system in which workers at the village level can be self-sufficient, and which requires little external technical assistance once the program is operational.

HMDS analyzed the experiences of 12 countries in devising the MEDEX model, combining this knowledge with its experience in the U.S., Micronesia, Thailand, Pakistan, Lesotho, and Guyana. The model is thus very flexible, including a program component for adapting it to cultural variables.

Working with the ministries of health of a number of developing countries, HMDS has devised a program for training the mid-level, or medex, workers. The medex training program is really an evolving system, referred to as the System of Teaching Essentials to Medex (STEM). It consists of: 1) a series of prototype or "generic" training modules covering the spectrum of tasks usually assigned to a mid-level worker; 2) an administrators' training program; 3) a program for adapting these modules to fit health, administrative, and cultural variables specific to a locale; 4) an adaptable program for actually implementing this modularized curriculum; and 5) a program for training prospective trainers in the use of the modules.

The basis for STEM is competency-based training, which relates content directly to job performance. Another distinguishing factor of STEM is the evaluation procedure: the student knows when he enters the program what the desired outcomes are, and his successful completion of the program is based on attaining these competencies.

The STEM training program is currently divided into three phases: modules, rotation, and preceptorship (plus continuing education). During the module phase of training, students focus on mastering the skills and knowledge presented in the modules; in the rotation phase, they are trained in patient management skills as they work in a series of outpatient clinics; in the preceptorship phase, they learn to function in their actual job situation under close supervision.

By June 1977 three programs had used the STEM competency-based modules to train mid-level health workers: the MEDEX/Pacific Program (Micronesia), the Lampang Health Development Project (Thailand), and MEDEX/Guyana. Student and instructor acceptance of the learning materials and methods was high in all three groups. Programs in Pakistan and Colombia have recently begun to implement MEDEX-based systems.

The final chapters of *Manpower and Primary Health Care* set forth guidelines for program operations and evaluation, including a detailed discussion of the role, selection, and support of the community health worker. The success of a CHW program ultimately depends on its adaptability to the needs and resources of the village community—and, the author adds, on continued encouragement and supervision by the medex.

The MEDEX primary health care system is, in practice, an evolutionary process. As the CHW works in the community, under medex supervision, the community begins first to accept new health concepts, then to increase health knowledge and health-seeking behavior. The CHW is progressively taught new skills; communities and traditional health practitioners may request training courses; and the people continue to incorporate modern health practices into their lives. This process is aided by health educa-

(Continued on page 15)

Beans in a Bowl

observations on communication and adult education in developing countries

by Andreas Fugelsang

"What does not happen in the village does not happen."

I am not an educator. I am approaching the question of nonformal education hesitantly and merely on the basis of some practical field experience in development programs on nutrition, maternal and child health care, primary health care, and human settlements.

Progress in these areas depends very much on a process that is nowadays called, somewhat loftily, *social communication*. For programs that are operational on a national scale, social communication is concerned particularly with communication management and organization—people who prefer another terminology would say with *political organization*. Some kind of organizational framework seems to be a prerequisite if social communication is to take place at all.

The meaning of the concept of *public participation* is presumably that people take part in something. It is possible that those who feel the urgency for developments in the field of nonformal education should forget about educational gimmicks and concentrate their efforts on a structural change

"It serves no purpose to disguise the fact that the ultimate effect of social information processing is transfer of authority."

of society, on the development of an organizational framework that permits genuine participation by the people. Nonformal education is generally ineffective because it is generally nonpolitical. All progress starts and ends in the village.

When Cuba's literacy campaign started in 1961, all schools and universities were simply closed, and teachers and students were sent to the rural areas to teach the villagers to read and write. It is not unlikely that this educational revolution was an outstanding success. The illiteracy rate was, in a few years, reduced from about 25 percent to less than 4 percent.

I am deeply suspicious of the professional attitudes of and value judgments made by educators and communicators alike—my own not excluded. The educational elite is surviving its own ineptness by continually reinforcing the bulwarks of its professed professionalism. Whose privilege is it to define the learning needs of the deprived and the poor? The educationalists have for too long betrayed the people with their professionalism.

All these bits and pieces of well-meaning efforts for the enlightenment of the masses! A society's nonformal education "system" is at best a cluster of reflections of its power structure. It demonstrates the misconception that people are objects to be formed or cases of ignorance to be treated, not human minds whose creativity is the ultimate resource of any social development.

My friend Ato Kassaye from Dessie in Welo Province in Ethiopia is a poor farmer, he is illiterate—and he is of exactly the same opinion.

He has a grain storage house of a size that has been determined through long tradition. He knows that if the house is full he has "enough" food for his family, and if the house is not full there shall be starvation before the next harvest. The agricultural extension worker insisted on knowing how many goatskin bags of grain Ato Kassaye carried from the field and emptied into his storehouse. Ato Kassaye could not count, but a remedy was found. He was asked to place a red bean in a little clay bowl for each bag he carried to the storehouse. He should then give the bowl of beans to the extension worker so that *he* could do the counting. It so happened that one day, when Ato Kassaye was about to place a new bean in the bowl, he discovered that all the beans he had put there before were gone. The whole mathematics had disappeared, eaten by the cunning birds of his heaven.

You cannot win when all the odds are against you.

Ato Kassaye gave up the calculations, carried the rest of his grain to his storehouse, assessed that it was "not enough," and went down the valley to drink *talla*. He did not need to know how many bags there were.

Attitudes and Learning Needs

Adult educators seem to be teaching adults as they have been taught to teach children. At best, they are a little more courteous. When shall we begin to understand that it hurts to be "uneducated" and "underdeveloped," to be told that what you do is a mistake, what you have done is inferior, what you should do you do not really know.

It is *not* the privilege of an educator to list requirements in terms of knowledge and skills for what is supposed to constitute an educated adult. He behaves as if he were listing empirical facts, when he is in reality making a series of value judgments. It is an extremely dubious enterprise to try to assess people's learning needs from a perception of their social situation. To jump further to definition of competency needed, design of curricula, and development of course plans is unrealistic and culturally oppressive.

Extension workers and adult educators in the field are slow to realize that youngsters and adults may have other priorities than education, and that no learning experience will work unless these priorities are integrated into it. It is said that there are many bright, experienced, and devoted fieldworkers in agriculture, public health, and adult literacy. However, the systems that educate fieldworkers also produce some educational tyrants. It is fundamental attitudes that count, and the fundamental misconceptions that permeate our thinking and our "systems" are dangerous. Our

"It is time to demystify the notion that the intentions of the educational establishment are of a nobler nature than those of others."

educators are basically taught—by implication of attitude—that they will meet superstition, deference, and ignorance in the village, and that is why they meet precisely that.

We are still far from recognizing that people realize themselves in social development and economic productivity, not through better knowledge, but through more confidence. When people feel they need better knowledge, they always find a way to acquire it. If there is, in that moment, an educational offer available, so much the better. Educational efforts and government incentives are important, but they cannot release the creative energies of the individual or the community for social development. Fundamental trust can.

Youngsters and adults alike will learn a skill or acquire new knowledge if they perceive it as a priority within the "horizon" of their own interests, within the borders of what they can see as meaningful to them. People have a perception of the world, of themselves, and of their relationship to others, a personal social role definition within which they act and behave. The relevance of a new skill or new knowledge is a function of this role definition. The challenge for the educator is not the imparting of new skills, but, as it has often been said, literally to "open up new horizons." People can become aware of themselves and the role they have defined for their behavior, and they can change it. It may be the task of the educator to assist in that transformation.

Maybe the need is not for an educator who can define learning needs, but for a collaborator who can help people to see the causes of the problems of their everyday life, to become aware of the possible solutions, and to animate the action for improvement of the situation. People have in actual fact always practiced a self-directed learning style. The task may be to prove to people—make them "see"—that in this process there are tools to use, that the knowledge and experience of others may be of value, that participatory learning experiences are important, that debating skills make a difference,

and that self-determination is possibly the purpose of it all. The latter is the point where education cannot avoid becoming political.

Ato Kassaye will learn to count his bags of grain the day he finds the concept of counting more useful, more meaningful in his life, than the concept of "enoughness" that is now embodied in the design of his grain storehouse. We should learn to trust his judgment.

The Illiterate Majority

For a discussion of nonformal education, it may be useful to recapitulate the statistical picture. The core target of the educational effort—indeed, of any development effort—is the poorest part of the population, which is also the part that is not literate.

The average rate of illiteracy in 1970 for those 15 years of age and older was as follows: Africa, 74 percent; Asia, 47 percent; and Latin America, 24 percent—with dramatic deviations in some (particularly poorer) countries, like Ethiopia, 92 percent, and Bangladesh, 78 percent. The picture becomes more interesting from an educational perspective if we break it down. The rate of illiteracy is, for example, significantly higher in rural than in urban populations. I mention at random from 1971:

	Rural	*Urban*	*Total*
Indonesia	47.8%	23.3%	43.4%
Dominican Republic	43.4%	19.0%	32.8%
Bangladesh	80.0%	51.1%	78.4%
Togo	93.6%	70.9%	90.3%

Progress has been slow: a country like Sudan improved its rate in the ten-year period 1956-1966 only from 88.8 percent to 85.3 percent. It is a question whether the population growth has actually outflanked the growth in educational programs.

Another important feature of this picture is that the rate of illiteracy is so much higher among the *elders*. Again some figures at random showing the difference between two age groups:

	15 - 64	*65 and over*
Zambia	52.7%	81.8%
Indonesia	43.4%	79.9%
Dominican Republic	32.8%	67.8%

One may say that not only has the universal primary education effort failed, the adult education effort has also been insufficient.

The final detail of interest is the fact that the rate of illiteracy is consistently higher among *women*. When, in 1966 in Sudan, it was 98.4 percent for those over 65, it was 100 percent among the women.

The statistical picture provides us certainly with the overall imperative for educational work, and also with details of importance for our understanding of what we are trying to do.

But first some words about information processing in society.

The Social Role of Information

Information (knowledge) is power, in the sense that those who do not have access to information are powerless. For the individual, information is the opposite of uncertainty. Access to information is reduction of uncertainty. It serves no purpose to disguise the fact that the ultimate effect of social information processing is transfer of authority. (Jarco Cerha, *Order without Authority*. Oslo: Markedskommunikasjon No. 1, 1973.) Political will is recognizing that people have the right to know, and acting accordingly.

Information is processed by a wide variety of social formations, of which educational institutions represent only one sector. These formations can be demystified and seen purely as networks of vested interests that are engaged in a process of social interaction and communication—most often in enlarging and perpetuating themselves. It is also

"Access to information is reduction of uncertainty."

time to demystify the notion that the intentions of the educational establishment are of a nobler nature than those of others.

It may be a fruitful point to bear in mind that public information, formal and nonformal education, and other activities in the field of social communication should ultimately and ideally occupy themselves with solutions to the problem of redistributing the information resources of society—a process that should lead to a larger degree of equality in the total social communication system.

Learning Styles and Information Processing

Mama Mukahamubwatu from Mapanza Village in the Southern Province of Zambia is 80 years old. She has developed the language she needs. If a thing or a plant has no use, it has no name, either. Her own name expresses the same economy of thought: *Hamubwatu* means, in Tonga, "he-who-drinks," and *Mukahamubwatu* means "she-who-is-married-to-he-who-drinks." The old lady knows the name of and can easily find more than 250 different plants in the bush. The seeds of the Mukula tree help against skin infection. The roots of Tamba-Kondo are pounded to a paste and smeared on the scalp to prevent lice—and it works! (G.W. Harley, *Native African Medicine*. London: Frank Cass & Co., 1970.) Mama Mukahamubwatu is illiterate, but it is difficult for me to understand that she should also be thought uneducated.

Let me stress that however prevalent the term "illiterate" is in literature, I find it distasteful. A negation of "literate," it carries a discriminatory notion: being illiterate is by implication something less desirable, less valuable, than being literate. Social anthropological research indicates that deeper insights are available. (A. Cole, et al., *The Cultural Context of Learning and Thinking*. N.Y.: Basic Books, 1971.) There is no such thing as a "primitive" mind—a stage of mental development that is "lower" than that of an educated person. Thought processes of all people are functionally equivalent, and they can be inferred from people's linguistic behavior.

The traditional village community has, if we allow ourselves a vague but reasonably acceptable generalization, a few functional features that are important from an educational point of view. The *learning style* of the village is radically different from the Western-inspired tutorial class. Learning is not concept-based, but rather an extra-linguistic process. Clearing the bush for a *chitemene* garden, threshing with the oxen, preparing millet for the beer-brewing—these are not learned as much from situations designed to transmit information orally as from observation. The child learns from direct interaction with the objects of the adult community, from following as a "little adult" literally in the footsteps of the working mother or father. This does not mean that "school-like" situations for transfer of information are not used. There may be, for example, instituted, verbalized situations during initiation periods for women and men, but even then learning seems to take place just as much from observation of the "instructor's" ritual behavior.

If we want to understand the problem of motivation in nonformal education, we must understand that there are different learning styles, different—and culturally conditioned—modes of processing information. The unmotivated student is a student accustomed to another learning style.

We should understand also that a language is more than a string of words; it is a whole life style. Mama Mukahamubwatu's methods of classifying fruits, berries, and plants are quite different from those of botanist Ponsonby. Her classification system generalizes from the overt properties of the object-members of the system and are therefore obviously limited by concrete experiences and by observations she has

"In the traditional, illiterate society, everybody's survival depends on the memory of the elders—and this is why the elders sometimes fear the progress of education."

made. Is the ability to abstract an unqualified advantage? When Mama Mukahamubwatu is introduced to a logical syllogism, her answer will more likely be dependent on the practical content of what is said than on the "logical necessity," because understanding the words that way is for her simply "more sensible":

a) All elephants in Luangwa Valley are white.

b) Bambo Nyierenda saw an elephant in Luangwa Valley. What color was it?

Answer: Why do you ask me? Ask Bambo Nyierenda. He was there!

Our thought processes are not different,

but our classification systems are.

Another feature of vital importance for information processing in the illiterate community is the people's extraordinary *memory*—a phenomenon that has struck many competent observers. (Leonard Dools, *Communication in Africa*. New Haven, Conn.: Yale University Press, 1961.) Evidently, in the absence of a written language there is no other means of information storage. The illiterate Bedouin cattle trader must remember every promise of delivery he makes and every transaction he has. His whole business depends on his ability of correct recall. He knows it and his clients know it. A word is a word.

The method of building and the measurements of a *tukul*-house are stored in the memory. Precisely where and when to find the best clay, how to mix the clay with straw and water so that it does not crack on the walls later—such vital information is stored in minute bits in the memory of the building masters.

The whole culture is stored in people's memories. This is the significance of an oral tradition, and in this situation the elders have the power, because they control the information resources of the community. It is the old woman who knows the secrets of beer-brewing, or how to avoid fungus on the groundnuts. It is the old man who knows the bush lore or how to run young oxen in for plowing. In the traditional, illiterate society, everybody's survival depends on the memory of the elders—and this is why the elders sometimes fear the progress of education. The memory loses its importance when information can be stored and processed through the written word.

As the statistics in a preceding paragraph bear out, a strategy for nonformal education cannot afford to ignore these fundamental phenomena. The traditional learning styles will not change for decades to come, and the memory of the elders will remain the most important device for information storage.

Or is it so that, as in Cuba, political will to structural change is the only real solution?

■

Part two of "Beans in a Bowl" will appear in the next issue of DCR.

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Bridging the Medical Language Gap in Alaska

by M. Walter Johnson

In Alaska, where communication has long been a vital part of the primary health care delivery system, health personnel are formally addressing an aspect of communication that is frequently overlooked: the importance of giving attention not only to the mechanical but also to the human or behavioral aspects of communication practices. Specifically, they are looking for ways to neutralize the training and language differences—and thus improve communication—between community health workers and their physician-supervisors.

Alaska's 210 Community Health Aides (CHAs) provide primary health care to some 40-50 thousand residents of 171 native villages of rural Alaska. The CHAs are nominated by their villages and trained at one of three training centers in three sessions of three or four weeks each, for a total of ten weeks. This training is supplemented by on-site training in the villages by Public Health Nurses, supervisors who are usually mid-level practitioners, and physicians.

Although the CHAs practice in remote areas, far from direct supervision, they are in constant communication with medical backup and support personnel. The mechanical arrangement for this contact may be single sideband high-frequency radio, telephone via satellite, or more conventional telephone, depending on village location. (See *DCR* Issues 17 and 26.) The typical pattern is for the hospital-based physician to make radio contact with each of the surrounding villages once a day, five days a week, and for hospital personnel to monitor for emergency calls evenings and weekends. In the radio contact, the CHA reports the symptoms of difficult cases and receives the physician's instructions for treatment. The physician-supervisor has years of training and a highly developed medical vocabulary; the CHA has ten weeks of training and as little as several months' exposure to medical terms. Hence the communication gap.

The CHA trainers address the communication problem during the formal training sessions by placing emphasis on developing the CHA's ability to gather information from a patient and to relay this information to her physician contact by radio or telephone. The health aide learns to organize her patient encounter data consistently under set headings: Subjective, Objective, Assessment, and Plan (SOAP). For consistency and reinforcement, health problems are presented during instruction in this format. The CHA practices writing SOAP patient encounter records under supervision while seeing patients in the clinic during training. The teaching staff introduces medical terms in training sessions only when there are not more common terms to serve the purpose, and then only those terms that are used in day-to-day primary care practice.

In a further effort to improve communication, the three Alaskan health aide training centers recently cooperated in producing a community health aide manual, *Guidelines for Primary Health Care in Rural Alaska* (1976), using the SOAP method to organize the contents. The students use the manual in the training sessions, then take it home with them to their village clinics. The manual was reviewed by the family practice and specialty physicians who provide the day-to-day medical supervision and referral services for the CHAs. The manual serves as a common ground to improve and facilitate communication. The CHA is encouraged to refer to the manual in organizing and presenting the patient encounter. New physician-supervisors are encouraged to study the manual and to refer to it during radiophone contacts. This expedites communication and reduces possibilities of error in interpreting instructions for treatment, including dosages of medicines.

The manual is also a necessary medical reference, as the CHA is frequently compelled to manage patients without medical contact because of atmospheric conditions unfavorable to high-frequency radio transmission, unreliability of local electrical power, or failure of ground equipment of the satellite telephone.

Many CHA instructors have felt that while emphasis has been placed on the training of aides, insufficient attention has been given to training those who give the follow-up teaching in the villages or provide the remote medical supervision. Now all physicians new to the health care system are given orientation in how to communicate more effectively with CHAs and support their work. Several days of orientation training are also offered to Public Health Nurses and health aide supervisors.

Communication is ultimately a two-way exchange between people; it cannot be assured by the presence of technical or mechanical systems. Effort must be exerted by both the village aides and the health professionals to modify their language and thinking to accommodate each other.

■

Guidelines for Primary Health Care in Rural Alaska *is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, U.S.A. Stock No. 017-026-00049-6, U.S. $6.30 (shipping in U.S. included).*

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Self-instructional Health Teaching Modules for Africa

by James W. Lea

The concept of "appropriate technology" continues to expand its influence on development communication. Funding agencies, program administrators, and consumers in many countries apply the criterion of appropriateness, not only to the local utility of hardware, but also to the compatibility of new development methods with existing cultural, social, and infrastructural systems. Appropriateness has been a key consideration of the African Health Training Institutions Project (AHTIP), a network of institutions in six African countries that have worked cooperatively for the past six years on the development of teaching materials, curriculum guides, and innovative training methods for family health care delivery.

The AHTIP project, administered by the University of North Carolina at Chapel Hill, has produced a library of 215 self-instructional units on family health topics, written by African medical, nursing, and midwifery faculty members. The library is organized in 12 subject areas according to the family life cycle concept, including such areas as the nature of the community; conception and infertility; pregnancy and birth; puberty, maturation, and marriage; and other subjects chosen by the authors as especially relevant to the health of the family in Africa. Sample titles of individual units include "Planning Community Health Examination Surveys," "Social Aspects of Female Infertility in Nigeria," "Nutrition in Pregnancy," "Interpretation of the Weight Chart and Its Significance in Child Health," and "Causes, Treatment, and Prevention of Malaria."

Self-Instructional Materials

The self-instructional mode was selected in the light of the high student-teacher ratios in many developing country institutions, with the expectation that self-instructional materials would allow students more independence in their learning and teachers more flexible use of their instructional time. The units are particularly useful as supplements to lectures or demonstrations, as basic student preparation in a subject area, or as assignments for extended work by students who learn at markedly different paces from their classmates. The materials do not replace the teacher as the cornerstone of a course, but they do make it possible for students to learn effectively on their own initiative. Moreover, because they are written in and for Africa, the units teach knowledge, skills, and approaches directly relevant to African health care problems.

Each self-instructional unit is designed for a specific student level, although most may be used with a variety of levels. The typical unit contains a statement of instructional objectives, a pre-test, and a sequence of information-practice-feedback cycles. In each cycle the student is presented with a small block of information (two to four paragraphs) or with instruction in a clinical or public health procedure. The practice step requires the student to answer questions about the information, apply a procedure, solve a problem, or otherwise actively use the information. The feedback step provides the correct answer or some other way for the student to check his or her practice. The self-instructional unit ends with a post-test, a bibliography, and a learner evaluation form.

The units, printed as 8 1/2" x 11" booklets, are inexpensive to print and mail. They are illustrated with line drawings and black-and-white photographs. (A few initial units contained 35mm color slides, until it became clear that the lowest media technology level that could be used effectively would guarantee the widest distribution and utility of the units.)

Creating the Materials

The self-instructional units have been written in a series of one-week workshops, conducted by African and American consultants at participating institutions in Cameroon, Egypt, Ghana, Kenya, Nigeria, and Sudan. During the workshops, institutional faculty members are introduced to the theory of instructional design and the process of writing and using self-instructional materials. Each faculty member then drafts a self-instructional unit, with assistance from the workshop leaders. The units are sent to North Carolina for editing, revision, and illustration at the program office, then returned to their authors in Africa for field-testing. Units are simultaneously tested in another country to gauge their broader applicability. Following second revisions based on the field-test data, the units are entered in catalogs and made available for distribution upon request.

The AHTIP library also includes *A Topical Outline for the Teaching of Family Health* (a guidebook for family health curriculum development) and several manuals for teachers, which, together with the self-instructional units, comprise a broad basic resource for the planning and implementation of family health teaching programs for medical students; for post-basic, basic, and enrolled level nursing and midwifery students; and for some levels of health technician and auxiliary students.

Distribution

A permanent center for the English-language publication and distribution of the AHTIP library has been established with the African Medical and Research Foundation in Nairobi, Kenya. The entire library has also been translated into French, and negotiations are in process to establish a similar system to serve Francophone Africa. A system for continually assessing the utility and periodically updating the content of the units is now being designed, and it is hoped that a review panel of African health educators will be named to perform this function.

Other AHTIP Efforts

The production and distribution of the AHTIP library is only one component of the program's broader effort to strengthen family health curricula and teaching capabilities. While the library is designed to be a free-standing resource, its impact is enhanced in those institutions which also undertake more comprehensive faculty and curriculum development programs. In Kenya, for example, the Ministry of Health has sponsored a series of workshops for faculty members in registered and enrolled-level nursing schools to assist in the implementation of the new national Community Health Nurse curriculum. The AHTIP has provided consultation and developmental materials in support of these workshops, which have helped to establish new educational programs and approaches in which the AHTIP library can be most effectively used.

In Sudan, the full utilization of the library of multidisciplinary teaching materials has been supported by workshops in which nursing, midwifery, and medical instructors have reviewed their common curricular interests and planned joint educational programs to introduce the team concept of family health care. Institutions affiliated with the AHTIP in other countries are following the same general approach of developing new family health teaching programs, for which the AHTIP library is a basic resource.

In the course of its programmatic history, the AHTIP has identified several program elements that may be key in the successful introduction of teaching materials for developing country health training institutions: 1) the selection of a format that is technologically and educationally appropriate and that addresses a range of instructional needs beyond the communication of new information; 2) the choice of the lowest effective technology level in the teaching medium, in order to assure the widest utility; 3) the recruitment of local faculty members as authors and reviewers; and 4) the provision of support for development of broader program contexts in which the new materials can be effectively used. ■

For more information, address the AHTIP, 406 University Square West, Chapel Hill, NC 27514, U.S.A.

James W. Lea is Director of the African Health Training Institutions Project.

A Communicator's Checklist

1 ***Communicating Family Planning to Rural Guatemala,*** by Jane T. Bertrand, Maria Antonieta Pineda, and Fidel Enrique Soto (Chicago, Illinois Community and Family Study Center, University of Chicago, 1978), 103 pages.

The authors of *Communicating Family Planning to Rural Guatemala* have made a significant contribution to the professionalization of population communication research, an area that has too often been characterized by equating impact with volume of activity. At the same time, they have performed a service unusual among academics: they have reported the results of a valuable audience research study and, between the same covers, applied those findings in practical terms to the planning and implementation of a communication campaign.

In 1976 the Asociacion Pro-Bienestar de la Familia (APROFAM) was given responsibility for Guatemala's family planning information, education, and communications (IEC) program. Information about the family planning audience was scanty. APROFAM therefore conducted a survey to determine what percentage of the rural population, both indigenous and ladino, already knew about contraceptives, how favorable the people were, how many had already experimented with some contraceptive method, what their beliefs and reservations about contraceptives were—in short, how receptive the population would be to APROFAM's new activities in rural areas.

Roughly half (52.2 percent) of the 567 individuals interviewed were favorable to family planning, whereas 41.8 disapproved. When the sample was weighted to approximate the population as a whole, the percentage of those approving dropped to 44.1 percent, and those disapproving rose to 51.1 percent. Only 7 percent were actually using contraceptives. Projected to the general population, this dropped to 5.8 percent.

The authors identified ten social-psychological factors that tend to generate disapproval of family planning and to limit the actual use of contraception in Guatemala: 1) perceived disapproval of "significant others"; 2) lack of knowledge on the variety of contraceptive methods—the indigenous knew much less about family planning than did the ladinos; 3) insufficient husband-wife communication; 4) desire for a large family; 5) lack of informal communication on family planning; 6) lack of concern for pregnancy and its implications; 7) the importance of having a son; 8) religious and moral beliefs; 9) lack of awareness about the demographic problem; and 10) rumors and beliefs about contraceptive methods.

The researchers recognize an important reality that is often overlooked by communication planners: to direct the program to those *already favorable* to family planning, rather than to try to convert those who are not. This approach is consistent with volunteerism and with current communication theory, which holds that mass media are more effective in increasing knowledge and reinforcing existing attitudes than in bringing about a change in attitude.

Eight demographic and socioeconomic traits are identified as characterizing those favorable to family planning:

- *Ethnic group*: In this study, ladinos were more favorable to family planning than were indigenous people.
- *Sex*: Notwithstanding the prevailing stereotype that men in Latin America oppose family planning because of "machismo," this study suggests that men are, if anything, more favorable than women.
- *Age*: Younger respondents were not found to be any more favorable than those 25-34 years of age.
- *Marital status*: Unmarried people were more favorable than married people.
- *Religion and degree of religiousness*: As in the United States, Roman Catholics were no less likely than those of other or no religion to approve or to practice family planning.
- *Literacy*: Both favorable attitude toward and use of family planning were higher among those who could read.
- *School attendance*: Respondents who had the opportunity to attend school were more likely to approve family planning and to use contraceptives.
- *Types of housing*: Those in better housing were more favorable toward and more likely to be practicing family planning.
- *Nutrition*: Those who were better fed were both more favorable toward and more likely to be using family planning methods.

In determining the most effective means for communicating family planning information in rural Guatemala, the authors found that radio had the greatest coverage of all media, reaching 78 percent of all those interviewed; 65 percent actually own radios. Only 6 percent see television, buy a newspaper or magazine, or go to the movies at least once a week. The great majority of ladinos said they wanted more information on family planning, regardless of media. This was less true for the indigenous.

The final chapter describes the application of these research results to the APROFAM communication effort. The ten social-psychological variables were used to plan message content, the demographic characteristics to determine how the messages for the ladino and indigenous target audiences should differ, and the media data to determine program logistics. The program primarily used radio for family planning spot announcements in the rural areas, and television to reach the nation's opinion leaders in the urban areas. The follow-up evaluation of the program is in process, the results to be published later as a "final chapter" to this monograph.

The authors admit that some readers will ask, "What is new about this program?" They answer, "In the context of Guatemala, it is a new program."

"This represents the first attempt to reach both urban and rural populations with a variety of informational/motivational messages.

"The program recognizes the differences that exist between the ethnic groups, not only in terms of the media used but also in . . . the content of the communications.

"Among the indigenous, APROFAM is attempting to reach three distinct groups in their own dialect, with messages that have been pretested to assure that the translations are correct.

"Perhaps most important of all, this project represents an attempt to base decisions in regard to various aspects of the communication program on empirical realities, not untested assumptions, taking into account the concerns and interests of the target population."

Communicating Family Planning to Rural Guatemala is of value to anyone responsible for developing a campaign among rural people. It clearly explains the research needed to guide the action phases and effectively relates theory to practice. ■

Available in English and Spanish for U.S. $3.00 from the Community and Family Study Center, University of Chicago, 1411 E. 60th St., Chicago, Illinois 60637, U.S.A.

Reviewed by Robert P. Worrall, Acting President of The Population Reference Bureau.

2 ***Rural Radio: Programme Formats,*** by Kiranmani A. Dikshit, et al. (Paris, UNESCO, 1979), 94 pages.

Rural Radio: Programme Formats is the fifth in a series of UNESCO monographs on communication technology and utilization. Not a true monograph, the volume is a collection of surveys, each by a different author, of seven rural broadcasting programs in five developing and two industrialized countries. The authors all are or have been staff members of the organizations producing the programs.

The LDC programs represented include the following: rural broadcasts of the Agricultural Information Section of the Ministry of Agriculture, Nepal; *Farmers' Session* of the Rural Broadcasts Department of the

National Broadcasting Commission, Papua, New Guinea; Ghana Broadcasting Corporation's radio farm forums; *Cotabato Ngayon* of Radio Station DXMS in Mindanao, Philippines; and the responsible parenthood campaign of Accion Cultural Popular (ACPO), Colombia. Also presented are *Rural Broadcast* of Radio Czechoslovakia, and the Canadian Broadcasting Corporation's *Radio Noon*.

Each survey discusses the background and setting of the program, its rationale, the radio station and production facilities, field support organization (where applicable), evaluation and feedback, in addition to describing the program format itself. The descriptions provide interesting and even amusing insights into how different formats and styles, such as dramatizations, spot announcements, humor, and interviews, are adapted to specific cultural settings.

Rural Radio should find a sympathetic and appreciative audience among rural broadcasters, students of radio, writers, and agricultural field agents. Planners may find that it helps them understand some of the practical and creative considerations that bear on using mass media effectively. ■

Available for U.S. $3.50 from UNIPUB, Box 433, Murray Hill Station, New York, N.Y. 10016, U.S.A., or from UNESCO publications offices abroad.

Reviewed by Peter Boynton of the Academy for Educational Development.

3

Third World Women Speak Out, by Perdita Huston (New York: Praeger/Overseas Development Council, 1979), 153 pages.

If one theme emerges from the interviews Huston records in *Third World Women Speak Out*, it is the women's almost fierce obsession with the need for education for both themselves and their children. Almost without exception the younger women Huston interviewed in Egypt, Kenya, Sudan, Tunisia, Sri Lanka, and Mexico are determined that their children will not be ignorant as they are, and, in many cases, that they themselves will eliminate their educational deficiencies and improve their life in the immediate future through nonformal education.

At times a generation gap is obvious, as the elderly grapple with the new philosophies propounded by the educated younger generation. In Kenya, for example, an elderly woman lamented the lack of respect of the educated younger generation for the older. In Tunisia, a young woman noted that the older generation is no longer welcome within the new nuclear family because "young couples want to live alone." Nonetheless, there is nearly unanimous agreement that education is necessary for survival.

Education for these women can mean different things, depending on their location, but it is almost always related to mastering skills and obtaining information that will enable them to improve their health and economic situation and educate their children—skills such as sewing, handicrafts, and improved agricultural and marketing techniques; information about nutrition, hygiene, health care, budgeting, and family planning.

The women in these vignettes tell their stories willingly and frankly, about repression by parents or husbands, beatings, poverty, and hardship on the one hand, and encouragement by progressive parents and husbands on the other. Their simple speech and unsophisticated manner often belie an acute awareness of economic and social problems that they might help solve if they had the necessary training.

The stories of the women's attempts at education, frequently told through interpreters, are moving. A semi-literate 25-year-old woman in a Tunisian training center, determined to learn to read despite her father's objection to education for women, had taken to peeling labels from the canned goods at the center in order to study them and improve her reading.

There are many more stories—about the Mexican woman who takes birth control pills secretly because she fears the reaction of her husband, who refuses to limit the family; the Sri Lankan woman whose tiny income goes for schoolbooks for her children; the young illiterate peasant woman in Kenya who despairs of ever being educated but longs to be a nurse. All of their stories point to the importance of women in the developing world and to the need to acknowledge their roles, provide training for them, and include them in decision processes at all levels. These women, Huston implies strongly, have been voiceless too long. ■

Available for U.S. $4.95 from the Overseas Development Council, 1717 Massachusetts Avenue, N.W., Washington, D. C. 20036, U.S.A.

Reviewed by Barbara O'Grady of the Academy for Educational Development.

4

Indonesian Maternal and Child Health Training Film. 16mm film, George Washington University Department of Medical and Public Affairs, 1978, 12 minutes, color.

This training film is a novel use of two kinds of film media, Super-8 and 16mm. Four short, color, Super-8 film cassettes have been produced in Indonesia on rehydration of the infant with diarrhea, care of a child with fever, supplemental feeding for the baby, and nutrition for pregnant women. Members of mothers' clubs view these silent, briefly subtitled films using a simple Super-8 viewer. The 16mm film, intended for the fieldworker, includes slightly longer treatments of each of the cassette subjects, along with information on how to use the cassettes and how to present the advice contained in them.

The method of presentation of these simple films, carefully planned to provide only the most essential message, clearly photographed, and reinforced through repetition, might be considered for adaptation to a variety of development education messages.

Readers are welcome to request information regarding the availability of this film from the Film Librarian, Information Services, George Washington University Department of Medical and Public Affairs, Airlie, Virginia 22186, U.S.A. ■

Reviewed by Judy Brace.

5

The Village Entrepreneur: Change Agents in India's Rural Development, by Wayne G. Broehl, Jr. (Cambridge, Massachusetts: Harvard University Press, 1978), 228 pages.

The Village Entrepreneur is a study of selected fertilizer distributors in Tamil Nadu, India, leading the author to a definition of the characteristics of the entrepreneur in a less developed country. The study fits into the literature on achievement motivation spearheaded by McClelland in the 1960s and the studies of "modernity," such as those of Inkeles, Rogers, and Shoemaker, in the late 1960s and early 1970s.

The author's conclusions support those of the earlier studies. The LDC entrepreneur is a person who enjoys a combination of certain attitudes, knowledge, and circumstances: access to information about resources and markets, ability to make short-range plans, appropriate "risk mentality," a practice of setting personal goals, a desire to maximize long-range profits, and a belief in the possibility of change.

Why should one read this book? Even though it is filled with intricate statistical analyses and detailed background information (including some apparent digressions), it is a thorough dissection of the interaction between individual behavior and economic opportunity in a rural area of a developing country. Particularly interesting to those working in nonformal education is the account of the training program in which the fertilizer distributors were introduced to entrepreneurial behaviors. A clear echo of what was written years ago by McClelland and his colleagues, the account achieves individuality by being woven into the elaborately described milieu of the whole study.

If nothing more, *The Village Entrepreneur* serves as a reminder to students of development of the difficulty of producing that "spark that brings . . . innovation to fruition." The study is a good microcosmic analysis of that spark. ■

Available for U.S. $18.50 from Harvard University Press, 79 Garden Street, Cambridge, Massachusetts 02138, U.S.A.

Reviewed by Jeanne Moulton, an educational advisor for the U.S. Agency for International Development.

INTERNATIONAL YEAR OF THE CHILD

"HEALTH MINUTES"

The Children's Television Workshop is in the final stages of producing a series of "Health Minutes" for television and radio in Latin America. The aim is to disseminate basic health information, particularly to help improve the health of lower-income segments of the population. The "Health Minutes" will consist of 50 one-minute messages for television, 25 of which will be adapted for radio as 30-second spots.

The messages, presented in Spanish and Portuguese, will cover five major subject areas: maternal and child care, communicable diseases, sanitation, accidents, and illness care. The content of the "Health Minutes" was established through discussion with health, education, and communications experts in Latin America and the United States.

The 50 messages will employ live-action film as well as animation, in the form of human-interest stories involving everyday activities. All writing, artwork, and filming has been done in Latin America by Latin American writers, artists, and filmmakers. A series of five booklets, similar in format and character to Latin American *fotonovelas*, is also being prepared. The booklets will cover the major subject areas and contain stories from the televised "Health Minutes."

The programs, underwritten by the Xerox Corporation, will be ready for broadcast during the latter part of 1979 and will be given gratis for broadcast for a five-year period. To date, eight Latin American countries have specifically declared a desire to use the "Health Minutes" on TV and radio.

The International Year of the Child organization has commended the "Health Minutes" to its National Commissions in Latin America as endeavors that "reflect the spirit of the IYC."

CHILD-to-child

The CHILD-to-child Program of the Institute of Child Health in London has produced a book of ideas on how children can help their younger brothers and sisters and their communities toward better health. Titled *CHILD-to-child*, it is addressed to the "adult teachers"—schoolteachers, health workers, parents—who can help "children teachers" develop simple and locally appropriate preventive and curative activities.

The book is organized around a series of steps, including finding out what the needs, problems, priorities, and resources are; talking over ways of meeting the problem; understanding other people's feelings and beliefs; designing appropriate activities; and improving programs through experience.

Using these steps as guides, *CHILD-to-child* suggests learning activities for children, such as making a health map of the community, doing a survey to collect community health information, playing a road safety game, making a "special" drink (a rehydration solution) for babies with diarrhea, recognizing danger signs in an illness, devising games to play with younger children, checking for malnutrition in young children using a "Shakir strip" *(see illustration)*, and making a brushing stick for cleaning teeth.

The suggestions are simply suggestions—a selection to choose from, to adapt to the situation, to use as starting points for developing new ideas. Taken together, they point up that we are all—including children—partners in development.

CHILD-to-child, edited by Audrey Aarons and Hugh Hawes, with Juliet Gayton (London: Macmillan, 1979), is available through booksellers or from the Institute of Child Health, 30 Guilford St., London SC1, U.K.

CHARTBOOK ON CHILDREN

"In 1975 there were just over 4 billion people in the world and 1.4 billion of them —36 percent—were children under age 15. By the year 2000, if current projections hold, there will be 1.9 billion children in the world—500 million more than in 1975." In observation of the International Year of the Child 1979, the Population Reference Bureau has published a book of two-color charts highlighting the contrasts between life for the fortunate one-fifth and life for the unfortunate four-fifths of the world's children.

Authors Magda Cordell McHale, John McHale, and Guy F. Streatfeild have put together 57 displays and tables depicting the numbers, proportions, and distribution of the world's children in 1975 and projected to the year 2000; their language groups and religious affiliations; their comparative situations in terms of health, disease, and life expectancy; access to health personnel and facilities; nutrition; access to satisfactory drinking water and hygienic waste disposal systems; access to resources for treatment of handicaps; education; and participation in the labor force.

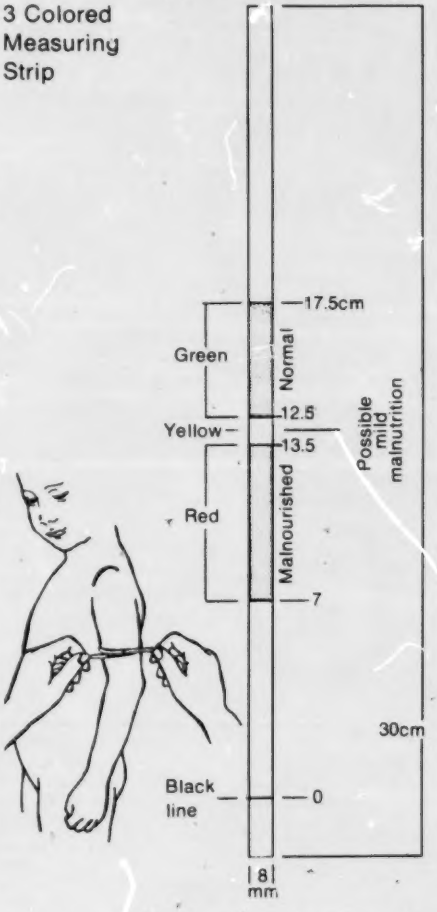
Single copies of the book, *Children in the World*, are available free of charge from the Population Reference Bureau, Inc., 1337 Connecticut Avenue, N.W., Washington, D.C. 20036, U.S.A. A set of six wall charts on children is also available at U.S. $1.50 for a set of six; notebook-size charts are U.S. $.35 per set, or U.S. $1.00 per set with a study guide.

THE "SHAKIR STRIP"

In surveying villages to assess the scale of the problems there, it is often a high priority to determine how many of the children are malnourished. A simple method is to measure the circumference of the child's upper arm. Arm circumference is almost the same for children between ages one and five, so the method described here works for children in that age group.

A measuring strip called the "Shakir strip" can be made cheaply from discarded X-ray film. The marks are scratched onto the emulsion side of the film, and the spaces between are colored as shown with spirit felt tip pens. (If these are not available, watercolor may be used on the emulsion side of the film but will wash off again if the strip gets wet. Ordinary inks do not work.)

To use the strip, place it around the upper arm of the child, as shown, and read off the color opposite the black line. In the green section, the child is normal for the age; yellow indicates mild malnourishment, but without clinical signs; red (for danger) indicates severe malnourishment. Other clinical signs will be apparent in children of the latter group.



More details are available from Teaching Aids at Low Cost (TALC), ICH, 30 Guilford Street, London WC1N 1EH, U.K.

FILMS ON HEALTH CARE

A WAY TO BRIDGE THE DISTANCE

The role of communication media in support of health care is examined in a new film, "A Way to Bridge the Distance." Photographed on location around the world, the film explores four different strategies for delivery of critical health information at the village level. The approaches documented vary from nationwide campaigns using radio classes, study groups, and workbook guides, to programs linking isolated health workers with regional hospitals via two-way radio. One project tested the effectiveness of commercial advertising strategies in promoting better infant nutrition.

The communication projects explored in the film support larger rural health programs. After describing the projects—located in Guatemala, Tanzania, Alaska, and the Philippines—the film summarizes elements of successful communication planning.

"A Way to Bridge the Distance," a 23-minute, 16mm color film, was produced for the U.S. Agency for International Development and is available through the Clearinghouse on Development Communication.

IMMUNIZE AND PROTECT YOUR CHILD

One of a series of nonverbal animated cartoon films sponsored by WHO, "Immunize and Protect Your Child" was developed to motivate mothers in developing countries to bring their infants to the local health center for a series of vaccinations. The film attempts to accomplish this objective without the use of words, either spoken or written, hoping that the film can be used without regard to linguistic or cultural boundaries.

The five-minute, 16mm color film, produced by Zagreb Film of Yugoslavia in 1977, is available from INF/FTV, World Health Organization, Avenue Appia, 1211 Geneva 27, Switzerland, and from Spears Associates, P.O. Box 1207, Arlington, Virginia 22210, U.S.A.

HEALTH CARE BY THE PEOPLE

This 28-minute color film describes the villager-run Project Piaxtla primary health care program in Mexico, described on page 5 of this issue. It is available for purchase (U.S. $350.00) or rental (U.S. $35.00), in English or Spanish, from The Hesperian Foundation, Box 1692, Palo Alto, California 94302, U.S.A.

THAT OUR CHILDREN WILL NOT DIE

Child mortality rates in West Africa are among the highest in the world. In Nigeria, the Institute of Child Health (ICH) of the University of Lagos estimates that in some parts of the country, half of the children born die before the age of five. ICH is convinced that there are faster and less costly ways to deliver health care to mothers and children than waiting for doctors to be trained and hospitals built.

The ICH approach is to help communities develop local health clinics that are run by nurses trained for expanded roles in both preventive and curative care. The nurses are assisted by specially trained community residents who also regularly visit clinic patients in their homes. "That Our Children Will Not Die" shows the ICH concept at work in five locations in Nigeria. (See also page 3.)

The 60-minute, 16mm color film is available for sale at U.S. $600 and for rental at U.S. $50.00, videocassette, U.S. $425.00. For information contact the Ford Foundation, Office of Reports, 320 East 43 St., New York, New York 10017, U.S.A. ■

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Low-cost Rural Health Care and Health Manpower Training: An Annotated Bibliography with Special Emphasis on Developing Countries. 4 volumes (1975, 1976, 1977, 1979). International Development Research Centre. Available from UNIPUB or from IDRC, Communications Division, P.O. Box 8500, Ottawa, Canada K1G 3H9.

The Manual of the Barefoot Doctor. An English translation of the manual used in Hunan Province, People's Republic of China. 1975. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, U.S.A. Order No. DHEW(NIH) 75-695.

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Salubritas— A quarterly newsletter dedicated to improving communications among field health workers concerned with the delivery of low-cost health services in developing countries. Available in English, French, and Spanish from APHA.

Storms, Doris M. *Design and Management of Auxiliary-Based Health Programs: Lessons from Developing Countries.* For information on availability contact the Department of International Health, The Johns Hopkins University, 615 N. Wolfe St., Baltimore, Maryland 21205, U.S.A.

World Health Organization. *Primary Health Care.* Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6-12 September 1978. Available from WHO.

(Continued from page 16)

operators. Most development projects are sponsored jointly by national governments and international development agencies, and technicians' salaries in the national organizations are usually modest. Trained technicians in government organizations are soon snapped up by private organizations prepared to pay higher wages. No sooner have they been trained to a reasonable level of competence than they are offered richer rewards elsewhere.

Supplies of Spare Parts and Consumable Items: Equipment salesmen from the leading audiovisual and electronics manufacturers have penetrated into the interior of the developing world, but their spare parts brethren are somewhat slower to arrive. In industrialized societies we are accustomed to walking into a store and buying film or audiocassettes of the correct size and technical specification, and we have convenient processing facilities, either through the store or via the mails. Rural shopkeepers in Bangladesh or Bolivia are not connected to photo-processing agencies, and mail service may be infrequent and unreliable.

Maintenance Budgets: An adequate 35mm camera for field use by a rural development worker may cost a development agency several hundred U.S. dollars — a relatively trivial item in an international agency aid budget. But when the expatriate aid officials pack their bags and leave the project in the hands of national development workers, the relative values and costs of equipment and parts change radically. To a development worker in a non-industrial society, a blank cassette may represent the price of food for his whole family for several days. In other words, decisions made by planners in rich countries may place real financial burdens on professional workers in poor ones.

The message is that before we get carried away with plans to introduce solar-powered transceivers in remote areas, equip extension personnel with mobile projection units, or provide field staff with 35mm cameras and synchronized tape players and projectors, we should think of the implications. Otherwise, the global villages may soon be strewn with admired but useless artifacts from the industrial world. ■

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tion in the schools "until community members know enough about their own health to improve the general health of a rural area." Thus, "the ultimate goals of primary care delivery programs are achieved by delivering appropriate health-related services in a manner acceptable to a community and based on equitable distribution of such services among the people." ■

Copies of Manpower and Primary Health Care are available for U.S. $10.00 from the University Press of Hawaii, 2840 Kolowalu Street, Honolulu, Hawaii 96822, U.S.A.

— S.L.

Development Aids or Global Village Artifacts?

a-v equipment and rural development

The following article, while not a Dilemma in DCR's usual pattern, highlights many of the problems common in rural development projects using sophisticated audiovisual equipment. The observations are offered by H. Stuart Hawkins, senior lecturer in agricultural extension at the School of Agriculture and Forestry, University of Melbourne, Australia.

Dilemmas in Country X: Candid discussions about failures *will be featured again in the next issue. The editor invites readers to submit reports for this column. Authors' names, as well as those of the people, agencies, and countries involved in the projects, will be withheld upon request.*

The village people were gathered near the *bale banjar*, or meeting place, in the village of Umasalakan in Bali, Indonesia, awaiting the start of the evening's activities. A group of rural development workers from Udavana University had come for a film-and-discussion evening to promote the use of crossbred chickens. The hum of excitement increased as the portable generator was started. A bright white light hit the screen—no film, no sound, just white light. All we heard from the crowd was an excited murmur of "*beh, beh*"—"gee whiz" in the local language.

The point is that films and electric light are rare in parts of Bali. Those of us from industrialized nations have grown up with both and take them for granted. While familiarity may not breed contempt for media, it does make us prone to dangerous assumptions about the use of electronic audiovisual equipment in promoting rural development.

Marshall McLuhan has fascinated us with his concept of the global village. He has not, however, turned his attention to the problems that occur when there is no global village smithy to mend the malfunctioning medium, nor has he told us much about the global village schoolteacher who will help us learn to use the medium effectively. He has not spelled out the importance of the global village shopkeeper, who stocks spare parts for broken or worn media equipment. He never mentions the global village moneylender, who will be called upon to finance the purchase of these machines when the global development specialist returns to his urban office or when the development grant runs out.

Many of us who work with rural development communication have been seduced by electronic wizardry and mechanized magic to the extent that we regard equipment as the panacea for peasant problems. Backpack video equipment, audio- and videocassette recorders, 35mm SLR cameras with automatic exposure adjustment, cartridge-loading slide projectors with electronic controls—these are the tools of the trade of modern rural communication workers in industrial and non-industrial nations alike.

The fact is that many of these tools lie unused in cupboards because people do not know how to use them properly. Some rot in storerooms, unusable because of inadequate moisture-proofing against the fungal attack so common in the tropics but relatively unknown to audiovisual workers from more temperate climates. Others remain in pieces in the repairman's shop because a key part is not available locally. Still others have been put away until film, tape, or lamp can be afforded.

Shiny gear enchants people, especially those who do not have it. It impresses development planners, and it lends prestige to people or organizations that possess it, even if it produces little. In an effort to break that spell, the following points regarding the extensive use of sophisticated audiovisual equipment in rural development projects are offered for consideration:

Training of Personnel: Cameras, projectors, videocassette recorders, and the like are wasted unless the people who are to use them know *how* to use them. The point seems elementary, but a surprising number of rural development workers I have met in South America and Southeast Asia have little practical knowledge of audiovisual media use, even when equipment in sound working order is available. Simple equipment training programs should be built into all development communication projects.

Equipment Maintenance: Trained technicians are in even shorter supply in many developing countries than are trained media

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primary health care—with and without doctors, plus observations from Fugelsang on communication & education